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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF STEEL

Lab ID	:	CP-2017-05-17-08 **Date: 19-05-17**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC drain and Providing RCC covering to Existing SWD at kondappa layout 25th cross road in ward No-02 of Yelahanka Sub Division.
Agency	:	Technical Manager (West), KRIDL, BBMP, Bangalore.
Customer's Reference	:	BBMP/EE(YNK.D)/W.O/62/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	17-05-17
Sample ID No	:	2017-05-17-08/04
Sample Type	:	Indus
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test:	:	18-05-17

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Indus	Fe500	8	0.391	538	612	19.5%	Satisfactory	Satisfactory
2	Indus	Fe500	10	0.615	552	649	21.0%	Satisfactory	Satisfactory

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Prepared By:
Harshitha

FOR CIVIL Pro.

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Certificate No.: T- 4358

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : CP-2017-05-17-08 **Date: 19-05-2017**
Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address : Yelahanka Sub Division, BBMP, Bangalore.
Project Name : Construction of RCC drain and Providing RCC covering to Existing SWD at kondappa layout 25th cross road in ward No-02 of Yelahanka Sub Division.
Agency : Technical Manager (West), KRIDL, BBMP, Bangalore.
Customer's Reference : BBMP/EE(YNK.D)/W.O/62/2016-17
Source of Sample : Sample supplied by Agency
Sample Condition : Satisfactory
Date of Receipt : 17-05-17
Sample ID No : 2017-05-17-08/01
Sample Type : Zuari 53grade
Reference to BIS codes : IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification ,
IS 4031 (Part 1,2 3,4,5, 6,11):1988
IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4
IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5
IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6
IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5
IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5
IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test : 18-05-17

SLNo.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	3.12%	–
2	Finess by Air permeablity method (m^2/kg, Min)	288.3m^2/kg	225m^2/kg, Min
3	Density (gm/cc)	3.24	–
4	Standard Consistency (%)	29.0%	Not specified
5	Initial Setting time	265 minutes	Not less than 30 minutes
6	Final Setting time	335 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.0mm	Not more than 10 mm

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-05-17-08** **Date: 15-06-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC drain and Providing RCC covering to Existing SWD at kondappa layout 25th cross road in ward No-02 of Yelahanka Sub Division.
Agency	:	Technical Manager (West), KRIDL, BBMP, Bangalore.
Customer's Reference	:	BBMP/EE(YNK.D)/W.O/62/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	17-05-17
Sample ID No	:	2017-05-17-08/01
Sample Type	:	Zuari 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	18-05-17

Compressive Strength			
Sl.No.	**Physical properties**	**Results**	**Requirement as per IS 12269: 2013**
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	55.5N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-05-17-08** **Date: 20-05-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC drain and Providing RCC covering to Existing SWD at kondappa layout 25th cross road in ward No-02 of Yelahanka Sub Division.
Agency	:	Technical Manager (West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/62/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	17-05-17
Sample ID No	:	2017-05-17-08/02(a)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	17-05-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	102	102	2.0	98.0	90-100
3	10 mm	3198	3300	66.0	34.0	25-55
4	4.75 mm	1637	4937	98.7	1.3	0-10
5	Pan	63	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : CP-2017-05-17-08 **Date: 20-05-2017**

Sample ID No : 2017-05-17-08/02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.1	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	8.9	
3	Specific Gravity	2.65	–
4	Bulk Density(Loose) (Kg/l)	155	–
5	Bulk Density(Compacted) (Kg/l)	1.57	–
6	Water Absorption(%)	0.19	–
7	Aggregate crushing Value(%)	23.8	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	20.8	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-05-17-08** **Date: 20-5-2017**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC drain and Providing RCC covering to Existing SWD at kondappa layout 25th cross road in ward No-02 of Yelahanka Sub Division.
Agency	:	Technical Manager (West), KRIDL, BBMP, Bangalore.
Customer's Reference	:	BBMP/EE(YNK.D)/W.O/62/2016-17
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	17-05-17
Sample ID No	:	2017-05-17-08/02(b)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	17-05-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	686	686	4.6	95.4	90-100
3	20 mm	7015	7701	51.3	48.7	30-70
4	10 mm	4428	12129	80.9	19.1	10-35
5	4.75 mm	2654	14783	98.6	1.4	0-5
6	Pan	217	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-05-17-08** **Date: 20-5-2017**

Sample ID No : 2017-05-17-08/02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.1	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.8	
3	Specific Gravity	2.59	–
4	Bulk Density(Loose) (Kg/l)	1.51	–
5	Bulk Density(Compacted) (Kg/l)	1.58	–
6	Water Absorption(%)	0.25	–

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2017-05-17-08** **Date: 20-05-17**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC drain and Providing RCC covering to Existing SWD at kondappa layout 25th cross road in ward No-02 of Yelahanka Sub Division.
Agency	:	Technical Manager (West), KRIDL, BBMP, Bangalore.
Customer's Reference	:	BBMP/EE(YNK.D)/W.O/62/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	17-05-17
Sample ID No	:	2017-05-17-08/03
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	17-05-17
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0	100	100	100	100	100
2	4.75 mm	57	57	5.7	94.3	90-100	90-100	90-100	95-100
3	2.36 mm	110	167	16.7	83.3	60-95	75-100	85-100	95-100
4	1.18 mm	204	371	37.1	62.9	30-70	55-90	75-100	90-100
5	600 micron	247	618	61.8	38.2	15-34	35-59	60-79	80-100
6	300 micron	291	909	90.9	9.1	5-20	8-30	12-40	15-50
7	150 micron	52	961	96.1	3.9	0-10	0-10	0-10	0-15
8	Pan	39	1000	100	0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-05-17-08** **Date: 20-05-17**

Sample ID No : 2017-05-17-08/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.18	–
2	Specific Gravity	2.6	–
3	Material finer than 75 micron(%)	4.1	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	CP-2017-05-31-04 **Date: 01-06-17**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RCC drain and Providing RCC covering to Existing SWD at kondappa layout 25th cross road in ward No-02 of Yelahanka Sub Division.
Agency	:	Technical Manager (West), KRIDL, BBMP, Bangalore.
Customer's Reference	:	BBMP/EE(YNK.D)/W.O/62/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	31-05-17
Sample ID No	:	2017-05-31-04/01
Customer ID	:	Drain Concrete
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 7 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 01/06/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	Drain Concrete	M20	25/05/2017	01/06/2017	150.11 X 150.73 X 150.64	22626	8.186	389.2	17.2	17.7
2	Drain Concrete	M20	25/05/2017	01/06/2017	150.18 X 150.37 X 150.99	22583	8.195	399.7	17.7	
3	Drain Concrete	M20	25/05/2017	01/06/2017	150.47 X 150.76 X 150.97	22685	8.174	410.6	18.1	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2017-05-31-04 **Date: 22-06-17**

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Construction of RCC drain and Providing RCC covering to Existing SWD at kondappa layout 25th cross road in ward No-02 of Yelahanka Sub Division.

Agency : Technical Manager (West), KRIDL, BBMP, Bangalore.

Customer's Reference : BBMP/EE(YNK.D)/W.O/62/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 31-05-17

Sample ID No : 2017-05-31-04/02

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 22/06/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Concrete	M20	25/05/2017	22/06/2017	149.28 X 150.78 X 150.33	22508	8.144	528.9	23.5	23.4
2	Drain Concrete	M20	25/05/2017	22/06/2017	150.28 X 150.33 X 150.47	22592	8.197	521.9	23.1	
3	Drain Concrete	M20	25/05/2017	22/06/2017	150.72 X 150.63 X 150.14	22703	8.172	538.1	23.7	

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